

WE CLAIM:

1. An isolated nucleic acid molecule encoding the transcription factor Hahb-4, a functionally active fragment or variant thereof, having the nucleic acid sequence of SEQ ID N° 1 or a fragment thereof.

2. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecules is a messenger RNA molecule.

3. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecules is a cDNA, having the nucleic acid sequence of SEQ ID N° 2 or a fragment thereof.

4. The isolated nucleic acid molecule of claim 1 encoding the transcription factor Hahb-4 or a functionally active fragment or variant thereof, wherein the molecule binds to a 5'-CAAT(A/T)ATTG-3' DNA sequence.

5. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule is derived from *Helianthus annuus*.

6. The isolated nucleic acid molecule of claim 1, wherein the transcription factor Hahb-4 or a functionally active fragment or variant thereof is capable of binding to a dehydration transcription regulating region of plant species.

7. A vector, comprising a promoter operably linked to the nucleic acid sequence selected from the group comprising of SEQ ID N° 1, SEQ ID N° 2 and fragments thereof.

8. The vector of claim 7, wherein the vector drives the expression of the transcription factor Hahb-4 or a functionally active fragment or variant thereof, wherein said transcription factor Hahb-4 or a functionally active fragment or variant thereof is capable of binding to a dehydration transcription regulating region of plant species.

9. The vector of claim 7, wherein the expression of the vector in a host cell provides an increased tolerance to environmental stress as compared to a wild type variety of such host cell.

10. A transgenic plant stably transformed with a nucleic acid molecule having a sequence selected from the group comprising SEQ ID N° 1, SEQ ID N° 2 and fragments

thereof, wherein the nucleic acid molecule encodes the transcription factor Hahb-4 or a functionally active fragment or variant thereof.

11. The transgenic plant of claim 10, wherein the expression of the nucleic acid molecule in the plant provides an increased tolerance to environmental stress as compared to a wild type variety of such plant.

12. The transgenic plant of claim 11, wherein the environmental stress is selected from the group comprising drought, salinity, osmotic and cold.

13. The transgenic plant of claim 12, wherein the environmental stress is drought.

14. The transgenic plant of claim 10, wherein the plant is a monocot.

15. The transgenic plant of claim 10, wherein the plant is a dicot.

16. The transgenic plant of claim 10, wherein the plant is water stress tolerant by binding the transcription factor Hahb-4 or a functionally active fragment or variant thereof to a dehydration transcription regulating region of plant.

17. A plant seed stably transformed with a nucleic acid molecule having a sequence selected from the group comprising SEQ ID N° 1, SEQ ID N° 2 and fragments thereof, wherein the nucleic acid molecule encodes the transcription factor Hahb-4 or a functionally active fragment or variant thereof.

18. A host cell that has been stably transformed with a nucleic acid molecule having a sequence selected from the group comprising SEQ ID N° 1, SEQ ID N° 2 and fragments thereof, wherein the nucleic acid molecule encodes the transcription factor Hahb-4 or a functionally active fragment or variant thereof.

19. The host cell of claim 18, wherein the host cell is selected from the group comprising bacterial, fungal, insect, plant and animal cell.

20. The host cell of claim 18, wherein the host cell is the plant cell.

21. A method of producing a water stress tolerant transgenic plant, the method comprising:

stably transforming a plant cell or cell culture with the nucleic acid sequence selected from the group

comprising SEQ ID N° 1, SEQ ID N° 2 and fragments thereof;
and

regenerating the cells or cell cultures into
plants.

22. An isolated nucleic acid molecule selected from
the group comprising:

(a) a nucleic acid molecule having the nucleotide
sequence SEQ ID N° 3;

(b) a nucleic acid molecule having the nucleotide
sequence SEQ ID N° 10;

(c) a nucleic acid molecule having the nucleotide
sequence of nucleotides 805 to 1221 of SEQ ID N° 3;

(d) a nucleic acid molecule having the nucleotide
sequence of nucleotides 904 to 1221 of SEQ ID N° 3;

(e) a nucleic acid molecule having the nucleotide
sequence of nucleotides 1011 to 1221 of SEQ ID N° 3;

(f) a nucleic acid molecule having the nucleotide
sequence of nucleotides 15 to 622 of SEQ ID N° 3;

(g) a nucleic acid molecule having the nucleotide
sequence of nucleotides 15 to 409 of SEQ ID N° 10;

(h) a nucleic acid molecule having a nucleotide
sequence complementary to the nucleic acid molecule of (a),
(b), (c), (d), (e), (f) or (g); and

(i) a nucleic acid molecule having a length of at
least 150 nucleotides and having at least 80% sequence
identity to the nucleic acid molecule of (a), (b), (c),

(d), (e), (f), (g) or (h), wherein said nucleic acid molecules are capable of promoting expression of a heterologous nucleic acid molecule in a transformed cell or tissue selected from the group comprising bacteria, fungal, insect, plant animal cell, embryogenic tissue, plant callus and plant seed.

23. A nucleic acid construct comprising a first nucleic acid molecule selected from the group comprising:

(a) a nucleic acid molecule having the nucleotide sequence SEQ ID N° 3;

(b) a nucleic acid molecule having the nucleotide sequence SEQ ID N° 10;

(c) a nucleic acid molecule having the nucleotide sequence of nucleotides 805 to 1221 of SEQ ID N° 3;

(d) a nucleic acid molecule having the nucleotide sequence of nucleotides 904 to 1221 of SEQ ID N° 3;

(e) a nucleic acid molecule having the nucleotide sequence of nucleotides 1011 to 1221 of SEQ ID N° 3;

(f) a nucleic acid molecule having the nucleotide sequence of nucleotides 15 to 622 of SEQ ID N° 3;

(g) a nucleic acid molecule having the nucleotide sequence of nucleotides 15 to 409 of SEQ ID N° 10,

(h) a nucleic acid molecule having a nucleotide sequence complementary to the nucleic acid molecule of (a), (b), (c), (d), (e), (f) or (g); and

(i) a nucleic acid molecule at least 150 nucleotides in length to the nucleic acid molecule of (a), (b), (c), (d), (e), (f), (g) or (h), wherein said first nucleic acid molecule is operably linked to a second nucleic acid molecules encoding a protein of interest and a 3' non-translated region.

24. The A nucleic acid construct of claim 23, wherein the first nucleic acid molecule is the promoter having the SEQ ID N°3.

25. The nucleic acid construct of claim 23, wherein the first nucleic acid molecule is the promoter having the SEQ ID N°10.

26. A host cell that has been stably transformed with the nucleic acid construct of claim 23.

27. The host cell of claim 26, wherein the host cell is selected from the group comprising bacterial, fungal, insect, plant and animal cell.

28. The host cell of claim 26, wherein the host cell is a plant cell.

29. A transgenic plant stably transformed with the nucleic acid construct of claim 23.

30. A method for expressing at least one protein of interest in a host cell, the method comprising:

introducing the nucleic acid construct of claim 23 into the host cell and allowing the host cell to produce a protein of interest.

31. The method of claim 30, wherein the host cell is selected from the group comprising bacterial, fungal, insect, plant and animal cell.

32. A method for obtaining a transgenic plant expressing at least one protein of interest, the method comprising:

stably transforming a plant cell or cell culture with the nucleic acid construct of claim 23;

regenerating the cells or cell cultures into a whole plant that expresses the at least one protein.

33. The method of claim 32, wherein the transgenic plant is selected from the group comprising a monocot and dicot plant.

34. A transgenic plant stably transformed with the nucleic acid construct of claim 23, wherein the protein of interest is the transcription factor Hahb-4, having the

nucleic acid sequence selected from the group comprising SEQ ID N° 1, SEQ ID N° 2 and fragments thereof.

35. The transgenic plant of claim 34, wherein the plant is selected from the group comprising monocot and dicot plant.

36. The transgenic plant of claim 34, wherein the plant is environmental stress tolerant.

37. The transgenic plant of claim 36, wherein the environmental stress is selected from the group comprises drought, salinity, osmotic, and cold.

38. The transgenic plant of claim 37, wherein the environmental stress is drought.

39. The transgenic plant of claim 34, wherein the plant is water stress tolerant by binding the transcription factor Hahb-4 or a functionally active fragment or variant thereof to a dehydration transcription regulating region of plant.

40. The transgenic plant of claim 39, wherein the dehydration transcription regulating region of the plant is a 5'-CAAT(A/T)ATTG-3' DNA sequence.